



## Wylie ISD Curriculum

<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>A.5 Linear functions. The student understands that linear functions can be represented in different ways and translates among their various representations.</p> <p>A.6 Linear functions. The student understands the meaning of the slope and intercepts of the graphs of linear functions and zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.</p> <p>A.7 Linear functions. The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.</p>	<p>8.7D Locate and name points on a coordinate plane using ordered pairs of rational numbers.</p> <p>A.5B Determine the domain and range for linear functions in given situations</p> <p>A.6A Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations.</p> <p>A.6E Determine the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations</p> <p>A.7A Analyze situations involving linear functions and formulate linear equations or inequalities to solve problems;</p> <p>A.7B Investigate methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, select a method, and solve the equations and inequalities; and</p> <p>A.7C Interpret and determine the reasonableness of solutions to linear</p>	<ul style="list-style-type: none"><li>Using algebraic knowledge to represent lines, rays, and segments graphically and symbolically in linear equations with appropriate domains.</li></ul> <p>G.7A Use and derive the distance formula for two points on either a horizontal or a vertical line.</p>
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<p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>G.3 Geometric structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.</p>	<p>equations and inequalities.</p> <p>G.7C Derive and use formulas involving length, slope, and midpoint.</p> <p>G.3B Construct and justify statements about geometric figures and their properties.</p> <p>G.9B Formulate and test conjectures about the properties and attributes of based on explorations and concrete models</p>	<p>G.7C Use and derive the distance formula in the Coordinate Geometry</p> <p>Use and apply Segment Addition</p> <p>Be able to Measure and draw segments</p> <p>Use and derive the midpoint formula</p> <p>G.3B Effectively and Correctly Construct Congruent Segments, Perpendicular Bisector of a Segment, Perpendicular Line through a Given Point on a Line, and Perpendicular Line from a Given point to a Given Line</p>
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions</p>	<p>8.7B Use geometric concepts and properties to solve problems in fields such as art and architecture</p> <p>8.16B Validate his/her conclusions using mathematical properties and relationships.</p>	

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<b>Subject Area</b>	Math	<b>Bundle #:</b>	2
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	4-6
<b>Overview</b>			
Tools of Geometry 2; Inductive Reasoning and the Angle Relationships Created by Two Lines and a Transversal			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
<p>G.1 Geometric structure. The student understands the structure of, and relationships within, an axiomatic system.</p> <p>G.2 Geometric structure. The student analyzes geometric relationships in order to make and verify conjectures.</p> <p>G.4 Geometric structure. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.2 Geometric structure. The student analyzes geometric relationships in order to make and verify conjectures</p>	<p>G.1A Develop an awareness of the structure of a mathematical system, connecting definitions, postulates, logical reasoning, and theorems.</p> <p>G.2A Use constructions to explore attributes of geometric figures and to make conjectures about geometric relationships.</p> <p>G.4A The student is expected to select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.</p> <p>G.2B Make conjectures about angles, lines, polygons, circles, and three-dimensional figures and determine the validity of the conjectures, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.</p>	<p>G.1A Name and identify types of angles – Acute, Obtuse, Right, Straight, Supplements, Complements, Linear Pair, Vertical Angles</p> <p>G.2A Effectively and correctly construct congruent angles, angle bisector, angle addition, parallel lines; and apply the skill to construct special quadrilaterals and equilateral triangles</p> <p>Explore and apply Angle Bisector Definition.</p> <p>Explore and apply Angle Bisector Theorem.</p> <p>Use and apply Angle Addition Postulate</p> <ul style="list-style-type: none"> <li>▪ Use concrete models to make and verify conjectures regarding angle relationships such as congruent angles, angle bisectors, vertical angles, adjacent angles, the angle addition postulate, right angles, complementary angles, supplementary angles, and linear pairs.</li> <li>▪ <i>Use dynamic software to construct various angle relationships making conjectures after measuring angles (i.e. vertical angles)</i></li> <li>▪ Solve problems using angle relationships.</li> </ul> <p>Define and apply relationships between angles formed when transversal crosses parallel lines</p>	

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<p>G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.</p> <p>G.3 Geometric structure. The student applies logical reasoning to justify and prove mathematical statements</p> <p>A.3 Foundations for functions. The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations.</p> <p>G.5 Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems</p>	<p>G.9A Formulate and test conjectures about the properties of parallel and perpendicular lines based on explorations and concrete models</p> <p>G.3C Use logical reasoning to prove statements are true and find counter examples to disprove statements that are false</p> <p>G.3D Use inductive reasoning to formulate a conjecture</p> <p>A.3A Use symbols to represent unknowns and variables.</p> <p>A.3B Look for patterns and represent generalizations algebraically</p> <p>G.5A Use numeric and geometric patterns to develop algebraic expressions representing geometric properties.</p>	<p>Classify special angles form by a transversal</p> <p>G.3C &amp; D Find the <math>n^{\text{th}}</math> term in a pattern or sequence.</p> <p><i>G.5A Write an equation for a sequence or pattern.</i></p>
<p>8.14 Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.</p> <p>8.16 Underlying processes and mathematical tools. The student uses</p>	<p>8.14C Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.</p> <p>8.16A Make conjectures from patterns or sets of examples and non-examples</p>	

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logical reasoning to make conjectures and verify conclusions	8.16B Validate his/her conclusions using mathematical properties and relationships.	
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<b>Subject Area</b>	Math	<b>Bundle #:</b>	3
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	7-9

### Overview

#### The Angle Relationships Created by Two Lines and a Transversal; and Structure and Properties of Triangles

#### TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>A.8 Linear functions. The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.</p> <p>G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric</p>	<p>G.7B Use slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines.</p> <p>A.8A Analyze situations and formulate systems of linear equations in two unknowns to solve problems.</p> <p>A.8B Solve systems of linear equations using concrete models, graphs, tables, and algebraic methods.</p> <p>A.8C Interpret and determine the reasonableness of solutions to systems of linear equations.</p> <p>G.9A Formulate and test conjectures about the properties of parallel and perpendicular lines based on</p>	<p>G.7B Writing equations of parallel and perpendicular lines</p> <p>G.9A Fold the patty paper to create a perpendicular line then repeat the process, asking questions about the difference of parallel slopes compared to perpendicular</p>

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<p>figures.</p> <p>G.4 Geometric Structure. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.2 Geometric structure. The student analyzes geometric relationships in order to make and verify conjectures.</p>	<p>explorations and concrete models.</p> <p>G.4A Select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.</p> <p>G.3E Use deductive reasoning to prove a statement.</p> <p>G.2A Use constructions to explore attributes of triangles and to make conjectures about geometric relationships.</p> <p>G.2B Make conjectures about variety of triangles and determine the validity of the conjectures such as congruency, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.</p>	<p>slopes.</p> <p>G.4A Discover Perpendicular or Parallel line theorems.</p> <p>G.3E Prove relationships of lines are parallel, perpendicular, or neither algebraically or through angle relationships formed by two lines and their transversal.</p> <p>G.2A Including but not limited to: <ul style="list-style-type: none"> <li>• The use of math tools such as manipulatives, paper folding, MIRA's, and technology.</li> <li>• The construction of congruent triangles</li> <li>• Explore attributes to make connections and verbalize how and why constructions work</li> </ul> <p>Classify Triangles by sides and angles</p> <p>G.2B Imbedded throughout the curriculum. Including but not limited to: <ul style="list-style-type: none"> <li>• Reflections</li> <li>• Translations</li> <li>• Rotations</li> <li>• The use of direct proofs, manipulatives and technology to draw conclusions and discover relationships about geometric shapes and their properties</li> <li>• Make conjectures that are verified by coordinates, axioms, or transformations</li> </ul> <p>Properties of Isosceles and Equilateral Triangles</p> </p></p>
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<p>G.3 Geometric structure. The student applies logical reasoning to justify and prove mathematical statements</p>	<p>G.3B Construct and justify statements about triangles and their properties;</p> <p>G.3C Use logical reasoning to prove statements are true and find counter examples to disprove statements that are false</p>	<p>G.3B Determine if side lengths will create a triangle</p> <p>Determine order of angles and sides</p> <p>Explore and apply Triangle Sum Theorem</p> <p>Explore and apply interior angle and its adjacent exterior angles</p>
<p>8.14 Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.</p> <p>8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions</p>	<p>8.14C Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.</p> <p>8.16B Validate his/her conclusions using mathematical properties and relationships.</p>	



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<p>G.10 Congruence and the geometry of size. The student applies the concept of congruence to justify properties of figures and solve problems.</p>	<p>G.10B Justify and apply triangle congruence relationships</p>	<p>G.10B Justify and use SAS, SSS, ASA, AAS, HL</p> <ul style="list-style-type: none"> <li>• Use triangle congruence to prove corresponding parts of triangles are congruent</li> <li>• Use paragraph proofs</li> <li>• Use pictures and drawings with appropriate congruence marking</li> </ul>
<p>8.14 Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.</p> <p>8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions</p>	<p>8.14C Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.</p> <p>8.16A Make conjectures from patterns or sets of examples and non-examples</p>	

<b>Subject Area</b>	Math	<b>Bundle #:</b>	5
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	13-15
<b>Overview</b>			
<b>Structure and Properties of Polygons and Similar Figures</b>			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
<p>G.10 Congruence and the geometry of size. The student applies the concept of congruence to justify properties of figures and solve problems.</p> <p>G.3 Geometric structure. The student applies logical reasoning to justify and</p>	<p>G.10B Justify and apply triangle congruence relationships</p> <p>G.3C Use logical reasoning to prove statements are true and find counter</p>	<p>G.10B, G.3C, &amp; G.3E Justify and use SAS, SSS, ASA, AAS, HL</p> <ul style="list-style-type: none"> <li>• Use triangle congruence to prove corresponding parts of triangles are congruent</li> <li>• Use paragraph proofs</li> <li>• Use pictures and drawings with appropriate congruence marking</li> </ul>	

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<p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>G.11 Similarity and the geometry of shape. The student applies the concepts of similarity to justify properties of figures and solve problems</p> <p>8.3 Patterns, relationships, and algebraic thinking. The student identifies proportional or non-proportional linear relationships in problem situations and solves problems.</p> <p>8.9 Measurement. The student uses indirect measurement to solve problems.</p>	<p>G.7B Use slopes and equations of lines to investigate geometric relationships, including parallel lines, and midsegments of triangles.</p> <p>G.11B Use ratios to solve problems involving similar figures.</p> <p>8.3B Estimate and find solutions to application problems involving percents and other proportional relationships such as similarity and rates.</p> <p>8.9B Use proportional relationships in similar two-dimensional figures to find missing measurements.</p>	<p>Use slopes and distance to investigate the Midsegment Theorem in triangles.</p> <p>G.11B Use and justify SSS, SAS, AA for similar triangles</p> <p>Use ratios, proportions, and scale factors given to find missing dimensions</p> <p>Apply all to real world situations</p>
<p>8.9 Measurement. The student uses indirect measurement to solve problems</p> <p>8.10 Measurement. The student describes how changes in dimensions affect linear, area, and volume measures</p> <p>8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions</p>	<p>8.9B use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements</p> <p>8.10B describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally</p> <p>8.16B Validate his/her conclusions using mathematical properties and relationships.</p>	



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<p>G.10 Congruence and the geometry of size. The student applies the concept of congruence to justify properties of figures and solve problems.</p> <p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>G.11 Similarity and the geometry of shape. The student applies the concepts of similarity to justify properties of figures and solve problems.</p> <p>G.5 Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems.</p>	<p>G.10A Use congruence transformations to make conjectures and justify properties of geometric figures including figures represented on a coordinate plane.</p> <p>G.7A Use two-dimensional coordinate systems to represent figures.</p> <p>G.11A Use and extend similarity properties and dilation to explore and justify conjectures about geometric figures</p> <p>G.5C Use properties of transformations and their compositions to make connections between mathematics and the real world, such as tessellations.</p>	<p>is the scale factor for this dilation? How is the relationship between the coordinates is related to the scale factor used for the dilation?"</p> <p>The use of direct proofs, manipulative and technology to draw conclusions and discover relationships about geometric shapes and their properties after transformation. Including but not limited to:</p> <ul style="list-style-type: none"> <li>• Triangles and quadrilaterals, circles and polygons</li> <li>• Use rotations, reflections, translations, and combinations of these to explore and make conjectures about geometric figures</li> <li>• Confirm that these transformations do not change the shape, size, or any properties of the figures.</li> <li>• Confirm that dilation is not a congruence transformation</li> </ul> <p>Make conjectures that are verified by coordinates, axioms, or transformations</p> <p>Including but not limited to:</p> <ul style="list-style-type: none"> <li>• Use ratios and proportions</li> <li>• Use scale factors given to prove whether the pre-image and image are similar</li> </ul> <p>Use the properties of transformation and angle measurement to determine whether a polygon or polygons can be tessellated and which kind of tessellation (pure, regular, semi-regular, or non-regular) it can be formed.</p>
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<p>7.7 Geometry and spatial reasoning. The student uses coordinate geometry to describe location on a plane.</p>	<p>7.7B Graph reflections across the horizontal or vertical axis and graph translations on a coordinate plane.</p>	
<p>7.8 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p>	<p>7.8A Sketch three-dimensional figures when given the top, side, and front views.</p> <p>7.8B Make a net (two-dimensional model) of the surface area of a three-dimensional figure; and</p> <p>7.8C Use geometric concepts and properties to solve problems in fields such as art and architecture.</p>	

<b>Subject Area</b>	Math	<b>Bundle #:</b>	7
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	19-21

### Overview

#### All About Right Triangles

#### TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
G.5 Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems	G.5A Use numeric and geometric patterns to develop algebraic expressions representing geometric properties.	<p>G.5A</p> <ul style="list-style-type: none"> <li>Simplify radicals and/or use decimal approximations</li> <li>Understand the verbal relationship that is the Pythagorean Theorem rather than just the context of "a", "b", and "c".</li> <li>Develop algebraic expressions, including distance formula, midpoint formula</li> <li>Develop proportions through the ratios of special right triangles and trigonometric ratios.</li> <li>Connect the four representations (graph, table, verbal, symbols)</li> </ul>

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<p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>G.8 Congruence and the geometry of size. The student uses tools to determine measurements of geometric figures and extends measurement concepts to find perimeter, area, and volume in problem situations.</p> <p>G.11 Similarity and the geometry of shape. The student applies the concepts of similarity to justify properties of figures and solve problems.</p> <p>8.3 Patterns, relationships, and algebraic thinking. The student identifies proportional or non-</p>	<p>G.5D Identify and apply patterns from right triangles to solve meaningful problems, including special right triangles (45-45-90 and 30-60-90), similarity in right triangles, and triangles whose sides are Pythagorean triples.</p> <p>G.7C Derive and use formulas involving length, slope, and midpoint.</p> <p>G.8C Derive, extend, and use the Pythagorean Theorem.</p> <p>G.11C Develop, apply, and justify triangle similarity relationships, including right triangle ratios, trigonometric ratios, and Pythagorean triples using a variety of methods.</p> <p>8.3B Estimate and find solutions to application problems involving percents and other proportional</p>	<p>G.5D Connect the 30-60-90 right triangle relationships to the equilateral triangle and the Pythagorean Theorem</p> <p>Connect the 45-45-90 right triangle relationship to the square and to the Pythagorean Theorem</p> <p>Connect scale factor of similar right triangles relationship to special right triangles and Pythagorean Theorem</p> <p>G.7C Make connection between the distance formula and the Pythagorean Theorem</p> <p>G.8C Use Pythagorean triples to show right triangle relationships in problem situations.</p> <p>Determine if three given side lengths of a triangle will form a right triangle</p> <p>Use the converse of the Pythagorean theorem to classify a triangle as acute, right, or obtuse.</p> <p>G.11C Make connections to concrete models, pictures, and figures</p> <p>Understand the verbal relationship that is the Pythagorean Theorem rather than just the context of "a", "b", and "c".</p> <p>Use sine, cosine, and tangent ratios to solve for missing measurements in problem situations.</p>
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<p>proportional linear relationships in problem situations and solves problems.</p>	<p>relationships such as similarity and rates.</p>	<p>Use triangle similarity properties to justify similarity in applied problem situations.</p>
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>8.9 Measurement. The student uses indirect measurement to solve problems.</p>	<p>8.7C Use pictures or models to demonstrate the Pythagorean Theorem</p> <p>8.9A Use the Pythagorean Theorem to solve real-life problems</p> <p>8.9B Use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.</p>	

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<b>Subject Area</b>	Math	<b>Bundle #:</b>	8
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	22-24
<b>Overview</b>			
<b>Structure and Properties of Quadrilaterals</b>			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
G.2 Geometric Structure. The student analyzes geometric relationships in order to make and verify conjectures.	G.2A Use constructions to explore attributes of geometric figures and to make conjectures about geometric relationships.	Use the properties of quadrilaterals, triangles, and special polygons (e.g. hexagons)	
G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.	G.9B Formulate and test conjectures about the properties and attributes of polygons and their component parts based on explorations and concrete models.		
G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.	G.3B Construct and justify statements about geometric figures and their properties.  G.3C Use logical reasoning to prove statements are true and find counter examples to disprove statements that are false.		
G.4 Geometric Structure. The student uses a variety of representations to describe geometric relationships and solve problems.	G.3E Use deductive reasoning to prove a statement.  G.4A Select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.		

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<p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world</p>	<p>G.7A Use one- and two-dimensional coordinate systems to represent quadrilaterals.</p> <p>G.7B Use slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and other polygons.</p> <p>G.7C Derive and use formulas involving length, slope, and midpoint.</p> <p>8.7B Use geometric concepts and properties to solve problems in fields such as art and architecture</p>	<p><i>Measure with protractors, rulers, and/or patty paper to verify conjectures.</i></p>
<p>(7.9) Measurement. The student solves application problems involving estimation and measurement.</p>	<p>(A) estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes</p>	

<b>Subject Area</b>	Math	<b>Bundle #:</b>	9
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	25-27
<b>Overview</b>			
<b>Perimeter/Circumference &amp; Area of Figures</b>			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
<p>G.5 Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.8 Congruence and the geometry of size. The student uses tools to determine measurements of geometric figures and</p>	<p>G.5A Use numeric and geometric patterns to develop algebraic expressions representing geometric properties.</p> <p>G.8A Find areas of regular polygons, circles, and composite figures.</p>	<p>G.5A/G.8A</p> <ul style="list-style-type: none"> <li>Derive formulas from patterns</li> <li>Make connections to areas of similar figures</li> <li>Find perimeter of regular polygons circles and composite figures at the same time</li> <li>Make connections to problem situations</li> <li>Understand and predict the effect on area if dimensions are changed</li> </ul>	

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<p>extends measurement concepts to find perimeter, area, and volume in problem situations.</p> <p>G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.</p> <p>G.3 Geometric structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.5 Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.11 Similarity and the geometry of shape. The student applies the concepts of similarity to justify properties of figures and solve problems.</p>	<p>G.9B Formulate and test conjectures about the properties and attributes of polygons and their component parts based on explorations and concrete models.</p> <p>G.3B Construct and justify statements about geometric figures and their properties.</p> <p>G.5D Analyze patterns from right triangles to solve meaningful problems, including special right triangles (45-45-90 and 30-60-90) and triangles whose sides are Pythagorean triples.</p> <p>G.11B Use ratios to solve problems involving similar figures.</p> <p>8.3B Estimate and find solutions to application problems involving percents and other proportional relationships such as similarity and rates.</p>	<p>G.9B</p> <ul style="list-style-type: none"> <li>• Formulas for area and perimeter of polygons starting with area or perimeter, leave in algebraic expressions including fractions</li> <li>• Special right triangles using ratios to find apothem and/or height</li> <li>• Connect the four representations (graph, table, verbal, symbols)</li> </ul> <p>G.3B Connect properties of polygons to solve the area of a composite figure.</p> <p>G.5D</p> <ul style="list-style-type: none"> <li>• Connect the 30-60-90 right triangle relationships to the equilateral triangle and the Pythagorean Theorem</li> <li>• Connect the 45-45-90 right triangle relationship to the square and to the Pythagorean Theorem</li> <li>• Understand the verbal relationship that is the Pythagorean Theorem rather than just the context of "a", "b", and "c".</li> </ul> <p>G.11B, G.11C, and G.11D</p> <ul style="list-style-type: none"> <li>• Create dilations</li> <li>• Compare area, perimeter, surface area, and volume of similar figures</li> <li>• Find missing dimensions</li> <li>• Apply all to real world situations</li> </ul>
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	<p>G.11C Apply right triangle ratios, trigonometric ratios, and Pythagorean triples using a variety of methods</p> <p>G.11D Describe the effect on perimeter, area, and volume when one or more dimensions of a figure are changed and apply this idea in solving problems.</p> <p>8.7B Use geometric concepts and properties to solve problems in fields such as art and architecture</p>	<p>Know the relationships of the linear measurements to the quadratic (area) and cubic (volume) measurements of a figure.</p>
7.9 Measurement. The student solves application problems involving estimation and measurement.	(A) estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes;	

<b>Subject Area</b>	Math	<b>Bundle #:</b>	10
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	28-30
<b>Overview</b>			
<b>3-D Drawings and Nets; Volume, Lateral Area, Surface Area of 3-D Figures</b>			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
G.6 Dimensionality and the geometry of location. The student analyzes the relationship between three-dimensional geometric figures and related two-dimensional representations and uses these representations to solve problems.	<p>G.6B Use nets to represent and construct three dimensional geometric figures.</p> <p>G.6C Use orthographic and isometric views of three-dimensional geometric figures to represent and construct three-dimensional geometric figures and solve problems.</p>	<p>G.6B/C; G.9D</p> <ul style="list-style-type: none"> <li>• Drawing 3-D figures</li> <li>• Drawing Nets</li> </ul>	

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<p>G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.</p> <p>G.8 Congruence and the geometry of size. The student uses tools to determine measurements of geometric figures and extends measurement concepts to find perimeter, area, and volume in problem situations.</p> <p>G.11 Similarity and the geometry of shape. The student applies the concepts of similarity to justify properties of figures and solve problems.</p>	<p>G.6A Describe and draw the intersection of a given plane with various three-dimensional geometric figures.</p> <p>G.9D Analyze the characteristics of polyhedra and other three-dimensional figures and their component parts based on explorations and concrete models.</p> <p>G.8D Find surface areas and volumes of prisms, pyramids, spheres, cones, cylinders, and composites of these figures in problem situations.</p> <p>G.11D Describe the effect on perimeter, area, and volume when one or more dimensions of a figure are changed and apply this idea in solving problems.</p>	<ul style="list-style-type: none"> <li>• Identify Solids from nets</li> <li>• Use unit blocks to build and explore different concrete models</li> <li>• Draw isometric views that show one view of the three sides; isometric dot paper will be a good aid.</li> <li>• Draw orthographic views that provide three separate drawings to show the sides (all views)</li> </ul> <p>G.8D</p> <ul style="list-style-type: none"> <li>• Derive formulas from patterns</li> <li>• Make connections to areas of similar figures and concrete models</li> <li>• Make connections to problem situations</li> <li>• Find lateral and total surface areas</li> <li>• Find Volume in problem situations</li> </ul> <p>G.11D</p> <ul style="list-style-type: none"> <li>• Understand and predict the effect on area if dimensions are changed             <ul style="list-style-type: none"> <li>• Prisms (with regular polygon bases to 10 sides)</li> <li>• Pyramids</li> <li>• Cones</li> <li>• Cylinders</li> <li>• Spheres</li> </ul> </li> <li>• Know the relationships of the linear measurements to the quadratic (area) and cubic (volume) measurements of a figure.</li> </ul>
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<p>G.5 Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.</p> <p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>G.8 Congruence and the geometry of size. The student uses tools to determine</p>	<p>G.3E Use deductive reasoning to prove a statement.</p> <p>G.5B Use numeric and geometric patterns to make generalizations about geometric properties, including angle relationships in circles.</p> <p>G.9C Formulate and test conjectures about the properties and attributes of circles and the lines that intersect them based on explorations and concrete models.</p> <p>G.7A Use two-dimensional coordinate systems to represent circles.</p> <p>G.7B Use slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and special segments of triangles and other polygons.</p> <p>G.7C Use formulas involving length and midpoint.</p> <p>G.8A Find areas of circles.</p>	<p>G.5B Discuss the relationships between the central angles and the arcs.</p> <p>G.9C Explore the properties of intersecting chords, secants and tangents</p> <p>Application of central angles, inscribed angles, and angles formed by tangent, secant, and chords to the reading of circle graphs.</p> <p>G.7 Apply the properties and structures of a circle in Coordinate Geometry.</p> <p>Find the coordinates of a point of tangency and the intersections of a secant with a circle.</p>
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measurements of geometric figures and extends measurement concepts to find perimeter, area, and volume in problem situations.	G.8B Find areas of sectors and arc lengths of circles using proportional reasoning.	G.8B Use the proportional relationships: $\frac{ArcLength}{Circumference} = \frac{Central\angle}{360^\circ}$ and $\frac{SectorArea}{CircleArea} = \frac{Central\angle}{360^\circ}$  to solve problems in real world situations.  Find Area of a segment of a Circle.
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<b>Subject Area</b>	Math	<b>Bundle #:</b>	12
<b>Grade/Level</b>	Geometry	<b>Weeks:</b>	34-36
<b>Overview</b>			
<b>Triangle Special Segments; Historical Development of Geometry</b>			
<b>Compare Euclidean and Non-Euclidean Geometry</b>			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
G.9 Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures.	G.9B Formulate and test conjectures about the properties and attributes of special segments and their component parts based on explorations and concrete models.	Identify Special segments of triangles, including midpoints, bisectors, medians, altitudes	
G.2 Geometric Structure. The student analyzes geometric relationships in order to make and verify conjectures.	G.2B Make conjectures about special segments and determine the validity of the conjectures, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.		
G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.	G.3C Use logical reasoning to prove statements are true and find counterexamples to disprove statements are false.		

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<p>G.4 Geometric Structure. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.7 Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.</p> <p>G.1 Geometric structure. The student understands the structure of, and relationships within, an axiomatic system.</p>	<p>G.3E Use deductive reasoning to prove a statement.</p> <p>G.4A The student is expected to select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.</p> <p>G.7B Use slopes and equations of lines to investigate special segments of triangles.</p> <p>G.1B Recognize the historical development of geometric systems and know mathematics is developed for a variety of purposes.</p> <p>G.1C Compare and contrast the structures and implications of Euclidean and non-Euclidean geometries.</p>	<p>G.1B</p> <ul style="list-style-type: none"> <li>• Recognize the discovery of Pi and its applications</li> <li>• Have a historical discussion of Euclid’s elements and how they are used in the development of modern geometry</li> <li>• Create a time line of geometry’s developments</li> <li>• Make connections on why geometric systems were developed.</li> <li>• Create golden rectangles by applying golden ratio</li> </ul> <p>Parallelism as exhibited in Euclid’s 5th postulate.</p> <ul style="list-style-type: none"> <li>• Non-Euclidian geometries include:</li> <li>• Spherical to show parallel lines do not exist as defined in Euclidean geometry</li> <li>• Cylindrical to show parallel lines do exist as defined in Euclidean geometry</li> </ul>
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